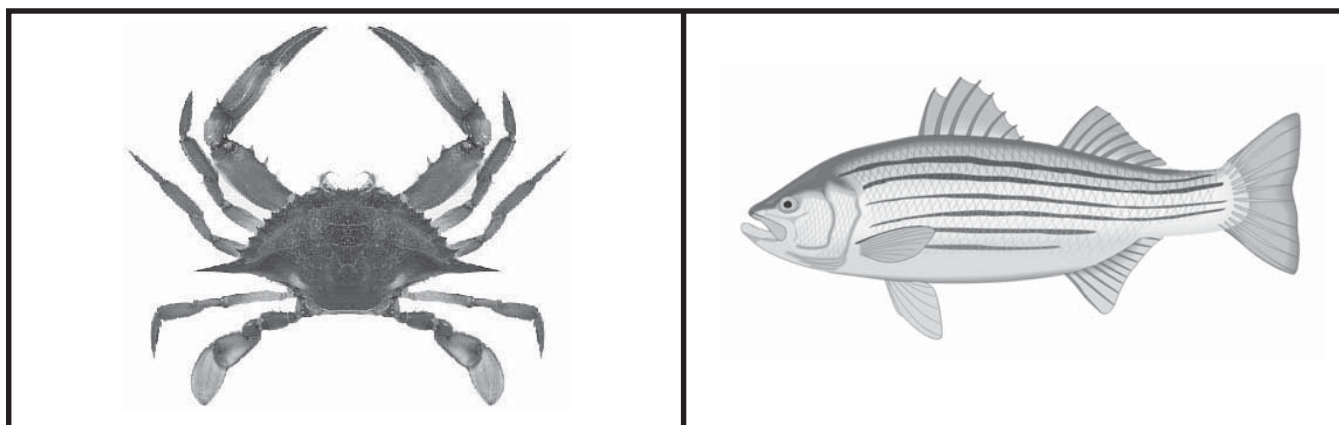


# 2004

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## A Guide to Health Advisories for Eating Fish and Crabs Caught in New Jersey Waters

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New Jersey Department of Environmental Protection  
New Jersey Department of Health and Senior Services



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The New Jersey Department of Environmental Protection and the New Jersey Department of Health and Senior Services can provide more information on the advisories and the health effects of chemical contaminants in the fish. To stay current with advisory updates and to request additional information, please contact the NJDEP Division of Science, Research and Technology at 1-609-984-6070 or check the website [www.state.nj.us/dep/dsr/njmainfish.htm](http://www.state.nj.us/dep/dsr/njmainfish.htm) or the NJDHSS at 1-609-588-3123 or [www.state.nj.us/health/eoh/foodweb](http://www.state.nj.us/health/eoh/foodweb).

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## Introduction

Fishing provides enjoyable and relaxing recreation. Many people enjoy cooking and eating their own catch. Fish are an excellent source of protein, minerals and vitamins, are low in fat and cholesterol and play an important role in maintaining a healthy, well-balanced diet. The American Heart Association recommends people eat fish regularly. Fish are also one of the few foods that are rich in the omega-3 fatty acids needed for proper development of the brain and nervous system in the fetus and infants, and may reduce the risk of heart attack. Fish are an excellent substitute for other protein foods that are higher in saturated fats and cholesterol. Health professionals recommend that you include fish in your diet.

However, certain fish may contain toxic chemicals, such as polychlorinated biphenyls (PCBs) dioxins and mercury from the water they live in and the food they eat. Therefore, it is a good idea to follow a few precautions in consuming recreationally caught fish and crabs, particularly if you eat them often. The purpose of this booklet is to provide information to you on how to reduce your risk by avoiding or limiting consumption of certain fish, and to guide you in preparing the fish you eat from local waters in ways that reduce your exposure to PCBs, dioxins and mercury.

Since 1982, when research began to show elevated levels of potentially harmful contaminants in certain fish and crabs in some New Jersey waters, fish consumption advisories were adopted to guide citizens on safe consumption practices. Fish consumption advisories are developed through a scientific process that includes collecting samples of fish from waters throughout the state and analyzing them for various chemical contaminants, such as dioxin, PCBs and mercury. The contaminant levels in the fish are then evaluated using federal guidelines for protecting human health. Chemical contaminants such as dioxin and PCBs are classified by the U.S. Environmental Protection Agency as probable cancer-causing substances in humans. Elevated levels of mercury can pose health risks to the human nervous system, particularly to developing fetuses.

The New Jersey Department of Environmental Protection (NJDEP) and Department of Health and Senior Services (NJDHSS) provide advice on consuming those species of fish in which high levels of dioxin, PCBs and mercury have been found. Since levels of contaminants may vary from one location to another, and from one fish species to another, the advisories are also separated by site. So be sure to check which guidelines refer to your fishing location.

## Health Effects from Consumption of Contaminated Fish and Crabs

### General Advice

Exposure to low levels of some contaminants in the environment may have long lasting health effects on people. Mercury, PCBs and dioxins are among the major contaminants found in some New Jersey fish in portions of the state. These contaminants can be especially harmful to women of childbearing age, pregnant women and nursing mothers. Trace amounts of these contaminants may remain in your body for a period of time after eating. Should you become pregnant during this time, these contaminants can be passed along to your fetus, potentially affecting the development of the nervous system. Children are also at risk of developmental and neurological problems if exposed to these chemicals.

### Mercury

Mercury is a toxic metal that has been commonly used in a number of products (e.g., thermometers, electrical switches). There are many sources of mercury in the environment, natural and man-made; primary sources include burning of fossil fuels such as coal, incineration of wastes, and metal processing/manufacturing.

Mercury discharged to the environment can end up in local water bodies. Mercury accumulates in fish tissue through the aquatic food chain from the food that fish eat. Above certain levels, mercury can damage the nervous system, particularly in unborn and young children, resulting in learning and developmental delays. With regular consumption, or even low amounts of mercury may cause subtle effects on the central nervous system in both children and adults. In addition, long-term consumption of fish with elevated levels of mercury by adults and older children may result in adverse health effects, including neurological damage.

### PCBs

Polychlorinated biphenyls (PCBs) were commercially produced for industrial application in heat transfer systems, hydraulic fluids and electrical equipment. They were later incorporated into other uses such as printing inks, paints and pesticides. The manufacture of PCBs was stopped in 1979 as a result of evidence that PCBs build up in the environment and cause harmful effects. PCBs tend to stay mostly in soil and sediment, but are also found in the air and water.

Once they enter the food chain, they have a tendency to absorb into fat tissue. PCBs build up in fish to levels that are hundreds of thousands of times higher than the levels in the surrounding water. When people consume fish that have already accumulated PCBs, the PCBs then accumulate in their bodies.

PCBs have been shown to cause cancer in animals, and there is evidence that PCBs may cause cancer in exposed humans. PCBs have also been shown to cause a number of serious health effects besides cancer in humans and animals, including effects on the nervous system of the developing fetus, the immune system, and the reproductive system. Studies have shown that unborn and young children are most at risk to PCB exposure. Because PCBs take a long time to leave the body after they accumulate, women who plan to become pregnant should follow the more restrictive consumption advice before becoming pregnant.

## Dioxin

Dioxin is the most toxic member of a large chemical family of related dioxins and furans. Dioxin is an unwanted industrial byproduct formed through numerous processes, including production of chlorinated phenol products such as herbicides, the incineration of municipal solid waste, and creation of paper products using bleach. Most of what we know about dioxin has been obtained through animal toxicity testing in the laboratory and representative wildlife species. Dioxin produces a number of effects in animal testing, including suppression of the immune system, impaired reproduction, birth defects in some species tested, a skin condition called chloracne, alterations in liver function, and cancer. The federal Environmental Protection Agency (EPA) has classified dioxin as a probable human carcinogen.

## General Consumption Guidelines

**Fish Species:** Contaminant levels may vary from species to species. If possible, eat smaller amounts of several different types of fish rather than a large amount of one type that may be high in contaminants. Try to focus your consumption on those species of fish that have lower levels of contaminants, such as fluke or flounder.

**Fish Size:** Smaller fish of a species will usually have lower chemical levels than larger fish in the same location because contaminants tend to build up in the fish over time. It is advisable to eat smaller fish (of legal size) more often than larger fish.

**High-risk Individuals:** Infants, children, pregnant women, nursing mothers and women of childbearing age are considered to be at higher risk from contaminants in fish than members of the general public. People within this category should be particularly careful about following the advisories, because of the greater potential for PCBs, dioxin and mercury to affect the development of the fetus, infant, and young child.

## Preparation and Cooking Methods for Fish and Crabs under Advisory (NOT FOR MERCURY)

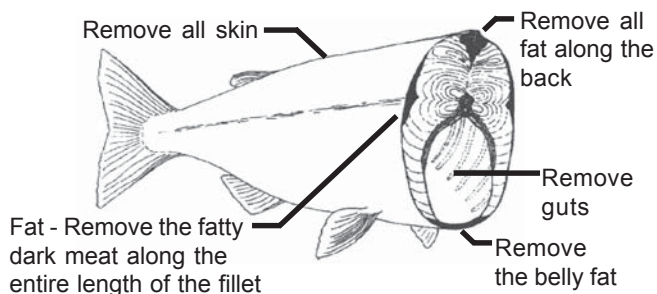
The best way to reduce exposure to contaminants in fish is to learn what fish species are affected and either limit or avoid consumption. However, if you must eat those species under advisories, there are steps you can take to reduce your exposure. Contaminants tend to concentrate in the fatty tissue of the fish you catch. Proper cleaning and cooking techniques, which remove some of the fat from the fish, can significantly reduce levels of PCBs, dioxins and other organic chemicals. Please note, however, that these techniques will not reduce or remove unsafe levels of **mercury** from these fish. Mercury occurs in the flesh. There is no way to remove mercury through cooking. The best way to reduce mercury exposure is to select those species of fish which are known to have lower levels of mercury. Also, these techniques are not effective for people in the high-risk group.

## Fish Preparation Methods

Proper fish cleaning and cooking techniques may reduce PCB levels by approximately 50 percent when compared to raw fish fillets.

**Eat only the fillet portions.** Do not eat whole fish or steak portions.

The following diagram illustrates those body portions. Many chemical contaminants, like PCBs and pesticides (but not mercury), are stored in the fatty portions of fish. To reduce the levels of these



chemicals, skin the fish and trim any of the dark meat (lateral line), back strap and belly flap.

Do not eat the heads, guts or liver, because PCBs usually concentrate in those body parts. Also, avoid consumption of any reproductive parts such as eggs or roe.

## Fish Cooking Methods

Use a cooking method such as baking, broiling, frying, grilling, or steaming that allows the fats and juices to drain away from the fish. When possible, cook the fish on an elevated rack that allows fats and juices to drain to the pan below.

Avoid batter, breading or coatings that can hold in the juices that may contain contaminants. The juices should be thrown away since they contain the PCBs and other chemicals that were in the fat. Do not pour these juices over the fish as a sauce or to moisten the fish. Butter, margarine or other liquids can be added to the fish for this purpose once the juices have been poured off.

After cooking, **discard all liquids and frying oils.** Do not reuse.

Do not use heads, skin, trimmed fatty portions in soups, stews, chowders, boils, broth or for fish stock. If you make stews or chowders, only use skinless fillet parts.

Raw fish may be infested by parasites. Cook fish thoroughly to destroy the parasites. This also helps to reduce the level of many chemical contaminants.

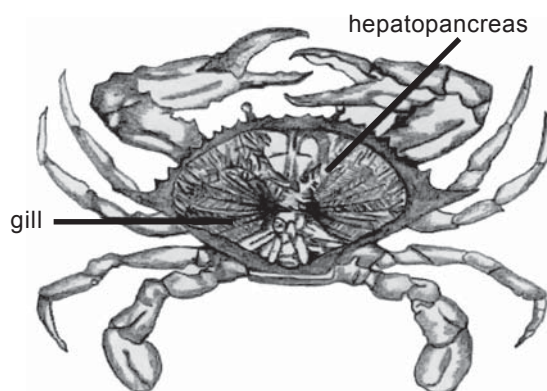
## Crab Preparation Methods

Eating, selling or taking (harvesting) blue crabs from Newark Bay Complex is prohibited. The Newark Bay Complex is located in northeastern New Jersey. It includes the Newark Bay, tidal Hackensack River, Arthur Kill, Kill Van Kull and tidal tributaries. (See chart on page 8.) If blue crabs are taken from water bodies other than the Newark Bay Complex, the following preparation techniques can be followed to reduce exposure to some contaminants.

The highest levels of chemical contaminants are found in the hepatopancreas, commonly known as the tomalley or green gland. It is the yellowish green gland under the gills. This material is found next to the lump meat (backfin) portion of the crab. Chill and break the crabs immediately before cooking. Care must be taken to remove all of the hepatopancreas before cooking.

There is no specific cooking method available to reduce the chemical contaminant levels in blue crabs. The following steps for proper preparation is key to reducing your exposure to harmful chemical contaminants.

- Do not eat the green gland (hepatopancreas).
- Remove green gland (hepatopancreas) before cooking.
- After cooking, discard the cooking water.
- Do not use cooking water or green gland (hepatopancreas) in any juices, sauces, bisques or soups.



## Federal Advice on Fish Consumption

The following is provided as general information and advice from the federal government.

Fish and shellfish are an important part of a healthy diet. Fish and shellfish contain high quality protein and other essential nutrients, are low in saturated fat, and contain omega-3 fatty acids. A well-balanced diet that includes a variety of fish and shellfish can contribute to heart health and children's proper growth and development. So, women and young children in particular, should include fish or shellfish in their diets due to the many nutritional benefits.

However, nearly all fish and shellfish contain traces of mercury. For most people, the risk from mercury by eating fish and shellfish is not a health concern. Yet, some fish and shellfish contain higher levels of mercury that may harm an unborn baby or young child's developing nervous system. The risks from mercury in fish and shellfish depend on the amount of fish and shellfish eaten and the levels of mercury in the fish



and shellfish. Therefore, the Food and Drug Administration (FDA) and the Environmental Protection Agency (EPA) are advising women who may become pregnant, pregnant women, nursing mothers, and young children to avoid some types of fish and eat fish and shellfish that are lower in mercury.

By following these 3 recommendations for selecting and eating fish or shellfish, women and young children will receive the benefits of eating fish and shellfish and be confident that they have reduced their exposure to the harmful effects of mercury.

1. Do not eat Shark, Swordfish, King Mackerel, or Tilefish because they contain high levels of mercury.
2. Eat up to 12 ounces (2 average meals) a week of a variety of fish and shellfish that are lower in mercury.
  - Five of the most commonly eaten fish that are low in mercury are shrimp, canned light tuna, salmon, pollock, and catfish.
  - Another commonly eaten fish, albacore ("white") tuna has more mercury than canned light tuna. So, when choosing your two meals of fish and shellfish, you may eat up to 6 ounces (one average meal) of albacore tuna per week.
3. Check local advisories about the safety of fish caught by family and friends in your local lakes rivers, and coastal areas. If no advice is available, eat up to 6 ounces (one average meal) per week of fish you catch from local waters, but don't consume any other fish during that week.

Follow these same recommendations when feeding fish and shellfish to your young child, but serve smaller portions.

**Additional information on mercury in seafood can be found at the FDA's web site: <http://www.cfsan.fda.gov/~dms/admeHg.html>**

**For more information on EPA freshwater fish consumption advisories, go to <http://www.epa.gov/ost/fish/>**

## **2004 Fish Consumption Advisories for PCBs, Dioxin and Mercury**

The following advisory tables provide statewide, regional, and water body-specific advisory information for various fish species. The tables are divided into PCB-Dioxin Advisories (pages 5-9) and Mercury Advisories (pages 10-17). The tables list the recommended fish consumption frequencies for the **General Population** and **High-risk Individuals** for waters statewide and for specific water bodies.

**General Population: PCB advisories for the General Population are presented as a range of meal frequencies (for example: one meal per month or four meals per year).** This range is based on an estimated 1 in 100,000 (lower risk) to 1 in 10,000 (higher risk) of cancer during your lifetime from eating fish at the advisory level. For example, 1 in 10,000 risk means that one additional cancer may occur in 10,000 people eating fish at the advisory level for a lifetime.

By using this advisory, you have the necessary information to make an informed choice on the number of meals of fish to consume. In this manner, you can decide how much risk is acceptable when you consider consuming the species listed in this advisory.

**High Risk Individuals: Includes infants, children, pregnant women, nursing mothers and women of childbearing age.**

The limits that follow each species assume that no other contaminated fish are being eaten. If you eat more than one species of fish listed in the advisory, the total consumption of fish should not exceed the recommended frequency as a guideline for consumption. One simple approach is to use the lowest recommended frequency as a guideline for consumption.

If your specific fishing location is not mentioned within the advisories on the following pages, this does not mean the fish are free of contamination. Not all New Jersey waters or fish species have been tested, and not all fish species were found in all locations, or in some cases available data were insufficient to list a species for a specific water body. **Follow the statewide advisory for the listed species if your fishing area is not mentioned in the guidelines.**

## 2004 PCB/DIOXIN FISH CONSUMPTION ADVISORIES

<b><u>PCB/DIOXIN</u> <u>STATEWIDE</u> <u>ADVISORIES</u></b> ESTUARINE & MARINE SITES  (All coastal waters except those under Water Body Specific Advisories)		GENERAL POPULATION <sup>1,2</sup>		HIGH-RISK INDIVIDUALS <sup>2,3</sup>
		LIFETIME CANCER RISK		BASED ON A NON-CANCER RISK
		1 in 10,000	1 in 100,000	
		DO NOT EAT MORE THAN:	DO NOT EAT MORE THAN:	DO NOT EAT MORE THAN:
STRIPED BASS*		One meal per month	One meal per year	Do not eat
BLUEFISH	(greater than 6 lbs/24 inches)	Four meals per year	Do not eat	Do not eat
	(less than 6 lbs/24 inches)	One meal per month	One meal per year	Do not eat
AMERICAN EEL		Four meals per year	One meal per year	Do not eat
AMERICAN LOBSTER		Do not eat the green gland, (i.e., Tomalley or Hepatopancreas)		

<b><u>PCB/DIOXIN</u> <u>WATERBODY</u> <u>SPECIFIC</u> <u>ADVISORIES</u></b> ESTUARINE & MARINE SITES		GENERAL POPULATION		HIGH-RISK INDIVIDUALS
		LIFETIME CANCER RISK		BASED ON A NON-CANCER RISK
		1 in 10,000	1 in 100,000	
		DO NOT EAT MORE THAN:	DO NOT EAT MORE THAN:	DO NOT EAT MORE THAN:
<b><u>NEWARK BAY COMPLEX</u></b> Including Newark Bay, tidal Hackensack River, Arthur Kill, Kill Van Kull and tidal tributaries.	Blue Crab*	Do not eat or harvest <sup>4</sup>		
	Striped Bass*	Do not eat		
	American Eel*	One meal per year	Do not eat	Do not eat
	White Perch			
	White Catfish			

<u>PCB/DIOXIN WATERBODY SPECIFIC ADVISORIES</u>  ESTUARINE & MARINE SITES		GENERAL POPULATION		HIGH-RISK INDIVIDUALS
		LIFETIME CANCER RISK		BASED ON A NON-CANCER RISK
		1 in 10,000	1 in 100,000	
		DO NOT EAT MORE THAN:	DO NOT EAT MORE THAN:	DO NOT EAT MORE THAN:
<u>TIDAL PASSAIC RIVER</u> Dundee Dam to Newark Bay and tributaries.	All Fish & Shellfish*	Do not eat		Do not eat
	Blue Crab*	Do not eat or harvest <sup>4</sup>		
<u>HUDSON RIVER</u> Downstream of NY-NJ border and Upper New York Bay	Striped Bass*	Four meals per year	Do not eat	Do not eat
	American Eel*	One meal per year		
	White Perch			
	White Catfish	Do not eat		
	Blue Crab	Six crabs per week	Three crabs per month	
		Do not eat green gland (hepatopancreas); Discard cooking liquid		
<u>RARITAN BAY COMPLEX</u> Includes the Raritan Bay, tidal Raritan River (from the Rte. 1 bridge ) and the tidal portions of all tributaries.	American Eel	One meal per year	Do not eat	Do not eat
	White Perch	Four meals per year	Do not eat	Do not eat
	White Catfish			
	Blue Crab	Six crabs per week	Three crabs per month	
Do not eat green gland (hepatopancreas); Discard cooking liquid				
<u>COASTAL TRIBUTARIES</u> Including the Navesink River, Shrewsbury River, Shark River, Toms River and Mullica River.	American Eel	Once a month	Once a year	Do not eat



<u>PCB /DIOXIN WATERBODY SPECIFIC ADVISORIES</u>  ESTUARINE & MARINE SITES		GENERAL POPULATION		HIGH-RISK INDIVIDUALS
		LIFETIME CANCER RISK		BASED ON A NON-CANCER RISK
		1 in 10,000	1 in 100,000	
		DO NOT EAT MORE THAN:	DO NOT EAT MORE THAN:	DO NOT EAT MORE THAN:
<u>LOWER DELAWARE RIVER</u> Phillipsburg, NJ to PA/DE line, including all tributaries to the head of tide.	American Eel	Four meals per year	Do not eat	Do not eat
	Striped Bass*			
	Channel Catfish	One meal every two months		
<u>DELAWARE RIVER ESTUARY</u> DE/NJ/PA border to C&D Canal	All Finfish	Do not eat		
<u>DELAWARE ESTUARY &amp; BAY</u> C&D canal to the mouth of Delaware Bay	Bluefish	Do not eat fish <u>larger than</u> 6 lbs or 24 inches		Do not eat
		No more than one meal per year for fish <u>less than</u> 6 lbs or 24 inches		
	Striped Bass White Perch American Eel Channel Catfish White Catfish	No more than one meal per year		Do not eat
<u>DELAWARE BAY TRIBUTARIES</u> All Delaware Bay Tributaries	American Eel	One meal per month	Four meals per year	

<u>PCB/DIOXIN</u> <u>WATERBODY</u> <u>SPECIFIC</u> <u>ADVISORIES</u>  FRESHWATER SITES		GENERAL POPULATION		HIGH-RISK INDIVIDUALS
		LIFETIME CANCER RISK		BASED ON A NON-CANCER RISK
		1 in 10,000	1 in 100,000	
		DO NOT EAT MORE THAN:	DO NOT EAT MORE THAN:	DO NOT EAT MORE THAN:
Pennsauken Creek, Forked Landing (Camden Co.)	Common Carp	Four meals per year	Do not eat	Do not eat
	Largemouth Bass	One meal per month	Four meals per year	
	Pumpkinseed Sunfish		One meal per year	
	White Catfish			
Evans Pond (Camden Co.)	Brown Bullhead	One meal per week	One meal per month	
Cooper River, below Evans Pond (Camden Co.)	Common Carp	One meal per month	One meal per year	Do not eat
	Bluegill Sunfish	One meal per week	One meal per month	
Cooper River, Hopkins Pond (Camden Co.)	Brown Bullhead	One meal per month	Four meals per year	
Cooper River Lake (Camden Co.)	Largemouth Bass	Four meals per year	Do not eat	
	Common Carp			
	Brown Bullhead	One meal per week	One meal per month	
	Bluegill Sunfish			
Newton Lake (Camden Co.)	Bluegill Sunfish	One meal per week	One meal per month	
	Brown Bullhead			
	Largemouth Bass	One meal per month	Four meals per year	
	Common Carp		One meal per year	Do not eat
Strawbridge Lake (Burlington Co.)	Largemouth Bass	One meal per month	One meal per year	
	Bluegill Sunfish			
	Common Carp	Four meals per year	Do not eat	
	Brown Bullhead	One meal per week	Four meals per year	

<u>PCB /DIOXIN</u> <u>WATERBODY</u> <u>SPECIFIC</u> <u>ADVISORIES</u>  FRESHWATER SITES		GENERAL POPULATION		HIGH-RISK INDIVIDUALS
		LIFETIME CANCER RISK		BASED ON A NON-CANCER RISK
		1 in 10,000	1 in 100,000	
		DO NOT EAT MORE THAN:	DO NOT EAT MORE THAN:	DO NOT EAT MORE THAN:
Stewart Lake (Gloucester Co.)	Bluegill Sunfish	One meal per week	One meal per month	One meal per month
	Brown Bullhead		Four meals per year	
	Largemouth Bass			
	Common Carp	One meal per month	One meal per year	Do not eat
Passaic River Dundee Lake to Elmwood Park (Passaic/ Bergen Co.)**	Redbreast Sunfish	One meal per week	Four meals per year	
	Brown Bullhead	One meal per month	One meal per year	
	Largemouth Bass		Do not eat	
	Common Carp		Do not eat	
Passaic River -confluence of Pompton River -Two Bridges (Passaic Co)**	Redbreast Sunfish	One meal per week	Four meals per year	Four meals per year
	Largemouth Bass		Do not eat	
	Common Carp	Four meals per year	Do not eat	
Bound Brook (entire length including New Market Pond, Spring Lake; Somerset Co.)	All fish species	Do not eat		

**NOTE:**

\* Selling any of these species from designated water bodies is prohibited in New Jersey.

<sup>1</sup> Range of Recommended Meal Frequency corresponds to a cancer risk of 1 in 10,000 to 1 in 100,000 over a lifetime.

<sup>2</sup> Eat only the fillet portions of the fish. Use proper trimming techniques to remove fat, and cooking methods that allow juices to drain from the fish (e.g., baking, broiling, frying, grilling, and steaming). See text for full description. One meal is defined as an eight-ounce serving.

<sup>3</sup> High-risk individuals include infants, children, pregnant women, nursing mothers and women of childbearing age.

<sup>4</sup> No harvest means no taking or attempting to take any blue crabs from these waters.

\*\* Supercedes the mercury advisory for listed species in these waters.

## **2004 MERCURY FRESHWATER FISH CONSUMPTION ADVISORIES**

The advisory table below provides statewide, regional, and water body-specific advisory information for various fish species for mercury. The Pinelands area covers portions of the following counties in the southern half of the state: Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, and Ocean counties (see map).

<b><u>MERCURY STATEWIDE &amp; REGIONAL ADVISORIES</u></b>	<b>SPECIES <sup>(1)</sup></b>	<b>GENERAL POPULATION</b>	<b>HIGH-RISK INDIVIDUALS <sup>(3)</sup></b>
		<b>EAT NO MORE THAN:</b>	<b>EAT NO MORE THAN:</b>
<b><u>STATEWIDE:</u></b> (All waters of the State except those listed in <b>PINELANDS REGION</b> and those listed below)	<b>Largemouth Bass Smallmouth Bass Chain Pickerel</b>	<b>One meal per week <sup>(2)</sup></b>	<b>One meal per month <sup>(2)</sup></b>
	<b>Yellow Bullhead Sunfish<sup>(4)</sup></b>	<b>No restrictions</b>	<b>One meal per month</b>
	<b>Brown Bullhead</b>	<b>No restrictions</b>	<b>One meal per week</b>
<b><u>PINELANDS REGION:</u></b> (All water bodies of the Pinelands except those listed below with a P notation)	<b>Largemouth Bass Chain Pickerel</b>	<b>One meal per month</b>	<b>Do not eat</b>
	<b>Brown Bullhead Yellow Bullhead</b>	<b>One meal per week</b>	<b>Do not eat</b>
	<b>Sunfish <sup>(4)</sup></b>	<b>One meal per week</b>	<b>One meal per month</b>

<b><u>MERCURY WATERBODY SPECIFIC ADVISORIES</u></b>		<b>SPECIES</b>	<b>GENERAL POPULATION</b>	<b>HIGH-RISK INDIVIDUALS</b>
			<b>EAT NO MORE THAN:</b>	<b>EAT NO MORE THAN:</b>
<b>Alycon Lake (Gloucester Co.)</b>	<b>P*</b>	<b>Black Crappie</b>	<b>No restrictions</b>	<b>One meal per month</b>
<b>Assunpink Creek (Mercer/Monmouth Co.)</b>		<b>Largemouth Bass</b>	<b>No restrictions</b>	<b>One meal per week</b>
<b>Assunpink Lake (Monmouth Co.)</b>		<b>Chain Pickerel Largemouth Bass</b>	<b>One meal per week</b>	<b>One meal per month</b>
<b>Atlantic City Reservoir - (Atlantic Co.) <u>No Fishing Allowed</u></b>	<b>P</b>	<b>Chain Pickerel Largemouth Bass Yellow Perch</b>	<b>Do not eat</b>	<b>Do not eat</b>
<b>Atsion Lake (Burlington Co.)</b>	<b>P</b>	<b>Yellow Bullhead</b>	<b>One meal per week</b>	<b>Do not eat</b>

<u>MERCURY</u> <u>WATERBODY</u> <u>SPECIFIC</u> <u>ADVISORIES</u>		SPECIES	GENERAL POPULATION	HIGH-RISK INDIVIDUALS
			EAT NO MORE THAN:	EAT NO MORE THAN:
Batsto Lake (Burlington Co.)	P	Chain Pickerel Largemouth Bass	One meal per week	Do not eat
		Bluegill Sunfish	One meal per week	One meal per month
		Brown Bullhead Yellow Bullhead	No restrictions	
Big Timber Creek (Gloucester Co.)		Channel Catfish Largemouth Bass White Catfish	No restrictions	One meal per week
		Brown Bullhead	No restrictions	No restrictions
Boonton Reservoir (Morris Co.)		Largemouth Bass White Catfish	One meal per week	Do not eat
				One meal per month
		Brown Bullhead	No restrictions	No restrictions
Budd Lake (Morris Co.)		Northern Pike White Catfish	No restrictions	One meal per week
Butterfly Bogs Pond (Ocean Co.)	P	Chain Pickerel	One meal per week	Do not eat
		Brown Bullhead	No restrictions	One meal per week
Canistear Reservoir (Sussex Co.)		Largemouth Bass	One meal per week	Do not eat
Carnegie Lake (Mercer Co.)		Largemouth Bass	One meal per week	Do not eat
		Channel Catfish White Perch	No restrictions	One meal per month
		Brown Bullhead		One meal per week
		Bluegill Sunfish		No restrictions
Cedar Lake (Cumberland Co.)	P	Chain Pickerel Largemouth Bass	One meal per week	Do not eat
Clementon Lake (Camden Co.)	P	Chain Pickerel Largemouth Bass	One meal per week	One meal per month
Clinton Reservoir (Passaic Co.)		Largemouth Bass	One meal per week	Do not eat
Cranberry Lake (Sussex Co.)		Chain Pickerel Hybrid Striped Bass	One meal per week	One meal per month
Crater Lake (Sussex Co.)		Yellow Perch	One meal per week	Do not eat
		Brown Bullhead		One meal per month
Crosswicks Creek (Mercer Co.)		Largemouth Bass White Catfish	No restrictions	One meal per week
Crystal Lake (Burlington Co.)		Largemouth Bass	No restrictions	One meal per month
		Black Crappie		One meal per week
		Brown Bullhead		No restrictions

<u>MERCURY</u> <u>WATERBODY</u> <u>SPECIFIC</u> <u>ADVISORIES</u>		SPECIES	GENERAL POPULATION	HIGH-RISK INDIVIDUALS
			EAT NO MORE THAN:	EAT NO MORE THAN:
DeVoe Lake (Middlesex Co.)		Chain Pickerel Largemouth Bass	No restrictions	One meal per month
		Brown Bullhead		One meal per week
Delaware & Raritan Canal @ Bound Brook (Somerset Co.)		Channel Catfish	One meal per week	Do not eat
Delaware River Upstream of Watergap (Warren/Sussex Co)		Smallmouth Bass	One meal per week	One meal per month
		Channel Catfish Muskellunge	No restrictions	
Delaware River - Watergap to Phillipsburg (Warren Co.)		White Catfish	One meal per week	Do not eat
		Channel Catfish Smallmouth Bass	No restrictions	One meal per month
		Walleye		One meal per week
Delaware River- Phillipsburg to Trenton (Hunterdon/ Mercer Co.)		Channel Catfish	One meal per week	One meal per month
		Largemouth Bass	No restrictions	
		Smallmouth Bass	No restrictions	One meal per week
Delaware River - Trenton to Camden (Burlington Co.)		Largemouth Bass White Catfish	No restrictions	One meal per week
Delaware River - Camden to Delaware State line (Camden/ Gloucester Co.)		Hybrid Striped Bass	No restrictions	One meal per week
Double Trouble Lake (Ocean Co.)	P	Chain Pickerel Yellow Bullhead	One meal per month	Do not eat
East Creek Lake (Cape May Co.)	P	Chain Pickerel Largemouth Bass Brown Bullhead Yellow Bullhead Yellow Perch	One meal per month	Do not eat
		Pumpkinseed Sunfish	One meal per week	One meal per month
Echo Lake Reservoir (Passaic Co.)		Largemouth Bass	No restrictions	One meal per week



<u>MERCURY</u> <u>WATERBODY</u> <u>SPECIFIC</u> <u>ADVISORIES</u>		SPECIES	GENERAL POPULATION	HIGH-RISK INDIVIDUALS
			EAT NO MORE THAN:	EAT NO MORE THAN:
Green Turtle Lake (Passaic Co.)		Largemouth Bass	No restrictions	One meal per month
		Chain Pickerel Yellow Perch		One meal per week
Greenwood Lake (Passaic Co.)		Largemouth Bass	No restrictions	One meal per month
		White Perch		No restrictions
Grovers Mill Pond (Mercer Co.)		Brown Bullhead Largemouth Bass	One meal per week	One meal per month
		Chain Pickerel	No restrictions	One meal per week
Hainesville Pond (Sussex Co.)		Largemouth Bass	No restrictions	One meal per month
		Chain Pickerel		One meal per week
Harrisville Lake (Burlington Co.)	P	Chain Pickerel Mud Sunfish Yellow Bullhead	One meal per month	Do not eat
Lake Carasaljo (Ocean Co.)	P	Largemouth Bass	One meal per week	Do not eat
		Chain Pickerel		One meal per month
Lake Hopatcong (Morris/Sussex Co.)		Chain Pickerel	One meal per week	One meal per month
		Largemouth Bass	No restrictions	
Lake Nummy (Cape May Co.)	P	Chain Pickerel Yellow Perch	One meal per week	Do not eat
		Yellow Bullhead	No restrictions	One meal per month
Lake Tappan (Bergen Co.)		Common Carp Smallmouth Bass Yellow Bullhead	No restrictions	One meal per week
Lenape Lake (Atlantic Co.)	P	Chain Pickerel	One meal per week	Do not eat
Linden Lake (Camden Co.)	P	Largemouth Bass	No restrictions	One meal per month
Little Timber Creek (Camden Co.)		Brown Bullhead	No restrictions	No restrictions
Malaga Lake (Gloucester Co.)	P	Chain Pickerel Largemouth Bass	One meal per month	Do not eat
Manasquan Reservoir (Monmouth Co.)		Largemouth Bass	One meal per month	Do not eat
		Black Crappie	One meal per week	One meal per month
		Bluegill Sunfish Chain Pickerel	No restrictions	
		Brown Bullhead Yellow Perch		One meal per week

<u>MERCURY</u> <u>WATERBODY</u> <u>SPECIFIC</u> <u>ADVISORIES</u>		SPECIES	GENERAL POPULATION	HIGH-RISK INDIVIDUALS
			EAT NO MORE THAN:	EAT NO MORE THAN:
Marlton Lake (Burlington Co.)	P	Largemouth Bass	One meal per month	Do not eat
Maskells Mill Lake (Salem Co.)	P	Brown Bullhead Chain Pickerel Largemouth Bass	One meal per week	One meal per month
		Black Crappie	No restrictions	
Merrill Creek Reservoir (Warren Co.)		Largemouth Bass	One meal per month	Do not eat
		Smallmouth Bass Lake Trout	One meal per week	
		Yellow Perch Black Crappie Bluegill Sunfish Brown Bullhead	No restrictions	One meal per month
		One meal per week		
Mirror Lake (Burlington Co.)	P	Largemouth Bass	One meal per week	One meal per month
		Brown Bullhead	No restrictions	One meal per week
Monksville Reservoir (Passaic Co.)		Chain Pickerel Walleye	One meal per month	Do not eat
		Largemouth Bass White Perch	One meal per week	
		Pumpkinseed Sunfish Smallmouth Bass	No restrictions	One meal per month
		Brown Bullhead		One meal per week
Mountain Lake (Warren Co.)		Largemouth Bass	One meal per week	Do not eat
Mullica River (Burlington/Atlantic Co.)	P	Chain Pickerel	One meal per month	Do not eat
		Brown Bullhead White Perch Pumpkinseed Sunfish	One meal per week	One meal per month
		White Catfish	No restrictions	
New Brooklyn Lake (Camden Co.)	P	Chain Pickerel	One meal per week	Do not eat
		Largemouth Bass		One meal per month
		Pumpkinseed Sunfish Black Crappie	No restrictions	
		Yellow Bullhead		
Newton Creek, North (Camden Co.)		Brown Bullhead	No restrictions	No restrictions

<u>MERCURY</u> <u>WATERBODY</u> <u>SPECIFIC</u> <u>ADVISORIES</u>		SPECIES	GENERAL POPULATION	HIGH-RISK INDIVIDUALS
			EAT NO MORE THAN:	EAT NO MORE THAN:
Newton Creek, South (Camden Co.)		Largemouth Bass	One meal per month	Do not eat
		Brown Bullhead	No restrictions	One meal per week
Oak Ridge Reservoir (Passaic Co.)		Largemouth Bass	One meal per week	Do not eat
		Smallmouth Bass		One meal per month
		Chain Pickerel Yellow Bullhead	No restrictions	
		Brown Bullhead		
Oradell Reservoir (Bergen Co.)		Largemouth Bass	No restrictions	One meal per month
		Yellow Bullhead Common Carp		No restrictions
Passaic River from Rt. 280 - confluence of Pompton River -Two Bridges (Morris/Essex/ Passaic Co.)*		Black Crappie Bluegill Sunfish	No restrictions	One meal per month
		Yellow Bullhead Pumpkinseed Sunfish		One meal per week
Pompton Lake (Passaic Co.)		Largemouth Bass	One meal per week	One meal per month
Pompton River at Lincoln Park (Passaic/Morris Co.)		Largemouth Bass Northern Pike	One meal per week	Do not eat
		Yellow Perch	No restrictions	One meal per month
Pompton River at Pequannock River (Passaic/Morris Co.)		Largemouth Bass Smallmouth Bass	One meal per month	Do not eat
		Rock Bass Yellow Bullhead Pumpkinseed Sunfish	One meal per week	Do not eat
		Redbreast Sunfish Black Crappie		One meal per month
Raritan River at Neshanic Station (Somerset Co.)		Largemouth Bass Smallmouth Bass Redbreast Sunfish Brown Bullhead Rock Bass	No restrictions	One meal per week

\* Also see PCB Advisories

<u>MERCURY</u> <u>WATERBODY</u> <u>SPECIFIC</u> <u>ADVISORIES</u>		SPECIES	GENERAL POPULATION	HIGH-RISK INDIVIDUALS
			EAT NO MORE THAN:	EAT NO MORE THAN:
Raritan River at Millstone River (Somerset Co.)		Largemouth Bass	One meal per week	One meal per month
		Channel Catfish	No restrictions	One meal per week
		Brown Bullhead		No restrictions
Raritan River at Route 1 (Middlesex Co.)		White Perch	No restrictions	One meal per week
Ridgeway Branch of Toms River (Ocean Co.)	P	Brown Bullhead Chain Pickerel	One meal per month	Do not eat
Rockaway River (Morris Co.)		Largemouth Bass	One meal per week	Do not eat
		Chain Pickerel	No restrictions	One meal per month
		Brown Bullhead Yellow Bullhead		One meal per week
Rockaway River at Whippany (Morris Co.)		Largemouth Bass	One meal per week	Do not eat
		Black Crappie	No restrictions	One meal per month
		Bluegill Sunfish		One meal per week
Round Valley Reservoir (Hunterdon Co.)		Largemouth Bass	No restrictions	One meal per month
		Lake Trout		One meal per week
Saw Mill Lake (Sussex Co.)		Northern Pike	No restrictions	One meal per month
		Brown Bullhead		No restrictions
Shadow Lake (Monmouth Co.)		Largemouth Bass	No restrictions	One meal per week
Speedwell Lake (Morris Co.)		Largemouth Bass	One meal per week	One meal per month
		Bluegill Sunfish	No restrictions	One meal per week
Spring Lake (Monmouth Co.)	P	Largemouth Bass	One meal per week	Do not eat
Spruce Run Reservoir (Hunterdon Co.)		Largemouth Bass Smallmouth Bass	One meal per week	One meal per month
		Hybrid Striped Bass	No restrictions	
Stafford Forge Main Line (Ocean Co.)	P	Chain Pickerel	One meal per week	Do not eat
Steenykill Lake (Sussex Co.)		Largemouth Bass	No restrictions	One meal per week
Success Lake (Ocean Co.)	P	Chain Pickerel	One meal per month	Do not eat

<u>MERCURY</u> <u>WATERBODY</u> <u>SPECIFIC</u> <u>ADVISORIES</u>		SPECIES	GENERAL POPULATION	HIGH-RISK INDIVIDUALS
			EAT NO MORE THAN:	EAT NO MORE THAN:
Sunset Lake (Cumberland Co.)	P	Largemouth Bass	One meal per week	One meal per month
Swartswood Lake(Sussex Co.)		Smallmouth Bass	No restrictions	One meal per month
		Chain Pickerel		One meal per week
Union Lake (Cumberland Co.)	P	Chain Pickerel Largemouth Bass	One meal per month	Do not eat
		White Perch	One meal per week	
		Bluegill Sunfish		One meal per month
Wading River (Burlington Co.)	P	Yellow Bullhead	One meal per month	Do not eat
		Brown Bullhead Chain Pickerel White Catfish	One meal per week	
Wanaque Reservoir (Passaic Co.)		Largemouth Bass White Perch	One meal per week	Do not eat
		Chain Pickerel Smallmouth Bass	One meal per week	One meal per month
		White Catfish	No restrictions	
		Brown Bullhead		
Wawayanda Lake(Sussex Co.)		Chain Pickerel	No restrictions	One meal per month
Whitesbog Pond(Ocean Co.)	P	Chain Pickerel	One meal per week	Do not eat
Willow Grove Lake (Cumberland Co.)	P	Chain Pickerel Largemouth Bass	One meal per month	Do not eat
		Yellow Bullhead	One meal per week	
		Brown Bullhead	No restrictions	One meal per month
Wilson Lake (Gloucester Co.)	P	Chain Pickerel Pumpkinseed Sunfish Yellow Perch	One meal per month	Do not eat
		Largemouth Bass	One meal per week	
Woodstown Memorial Lake (Salem Co.)		Black Crappie Largemouth Bass	No restrictions	One meal per month

(1) Not all species were found or analyzed in all water bodies, or inadequate data were available to list some species.

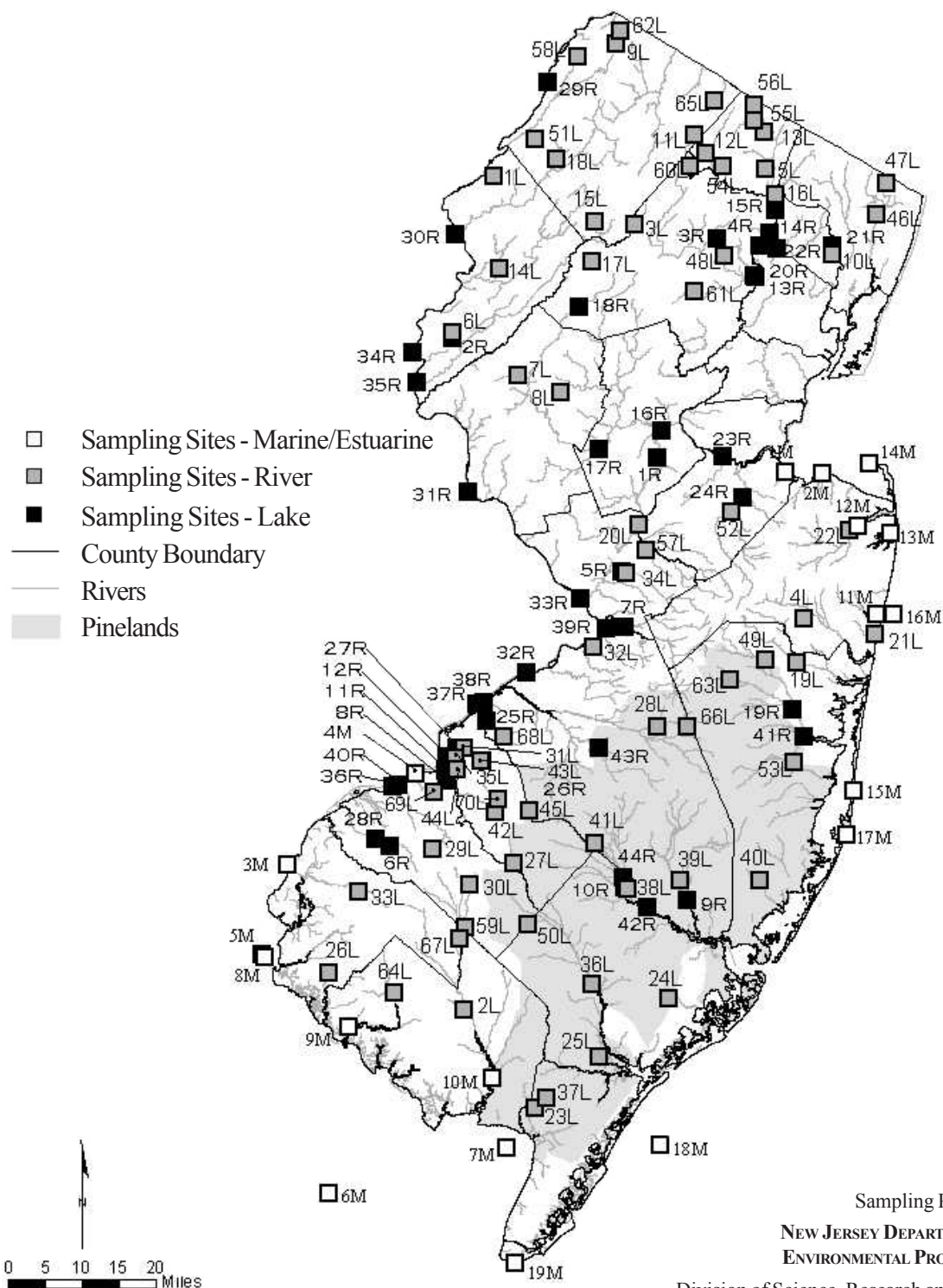
(2) One meal is defined as an eight-ounce serving.

(3) High-risk individuals are pregnant women, women planning pregnancy within one year, nursing mothers and children under five years old.

(4) Sunfish includes bluegill, pumpkinseed, and redbreast sunfish.

\* Region: P = Pinelands Area

# New Jersey Fish Tissue Sampling Sites





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**Lakes**

1L	Catfish Pond near Delaware Water Gap
2L	Union Lake
3L	Lake Hopatcong
4L	Manasquan Reservoir
5L	Wanaque Reservoir
6L	Merrill Creek Reservoir
7L	Spruce Run Reservoir
8L	Round Valley Reservoir
9L	Saw Mill Lake
10L	Dundee Lake
11L	Canistear Reservoir
12L	Clinton Reservoir
13L	Monksville Reservoir
14L	Mountain Lake
15L	Cranberry Lake
16L	Pompton Lake
17L	Budd Lake
18L	Swartswood Lake
19L	Lake Carasaljo
20L	Carnegie Lake
21L	Spring Lake
22L	Shadow Lake
23L	East Creek Lake
24L	Atlantic City Reservoir
25L	Corbin City Impoundment #3
26L	Maskells Mills Lake
27L	New Brooklyn Lake
28L	Mirror Lake
29L	Alcyon Lake
30L	Wilson Lake
31L	Cooper River Park Lake
32L	Crystal Lake
33L	Woodstown Memorial Lake
34L	Assunpink Lake
35L	Newton Lake
36L	Lenape Lake
37L	Lake Nummy
38L	Batsto Lake
39L	Harrisville Lake
40L	Stafford Forge Main Lake
41L	Atsion Lake
42L	Clementon Lake
43L	Evans Pond
44L	Haddon Lake
45L	Marlton Lake
46L	Oradell Reservoir
47L	Tappan Lake
48L	Boonton Reservoir
49L	Butterfly Bogs
50L	Cedar Lake
51L	Crater Lake
52L	De Voe Lake

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**Rivers**

1R	Delaware and Raritan Canal
2R	Merrill Creek
3R	Rockaway River
4R	Passaic River Great Piece
5R	Assunpink Creek
6R	Rancocas Creek
7R	Crosswicks Creek
8R	Big Timber Creek
9R	Wading River
10R	Mullica River
11R	Little Timber Creek
12R	Newton Creek
13R	Passaic River at Hatfield Swamp
14R	Pompton River at Lincoln Park
15R	Pompton River at Pequannock River
16R	Raritan River at Millstone Creek
17R	Raritan River at Neshanic Station
18R	Raritan River, So. Branch, Clairemont Stretch
19R	Ridgeway Branch of Toms River
20R	Rockaway/Whippany Rivers
21R	Passaic River at Elmwood Park
22R	Passaic River at Pompton
23R	Raritan River Upper at Rt 1
24R	South River at Old Bridge
25R	Pennsauken Creek at Forked Landing
26R	Cooper River at mouth of Evans Pond
27R	Cooper River at Cooper River Lake
28R	Raccoon Creek at mouth near Swedesboro
29R	Delaware River at Smithfield Beach
30R	Delaware River at Portland
31R	Delaware River at Byram
32R	Delaware River above mouth of Neshaminy Creek
33R	Delaware River at Trenton
34R	Delaware River at Easton
35R	Delaware River at Raubsville
36R	Delaware River at Paulsboro
37R	Delaware River at Palmyra
38R	Delaware River at Riverton
39R	Delaware River at Crosswick Creek
40R	Delaware River/Bay at Mantua Creek mouth
41R	Toms River
42R	Mullica River between Green Bank and Batsto
43R	Rancocas Tributary between Vincentown and Buddtown
44R	Mullica River from Atsion to Pleasantville

**Marine/Estuarine**

1M	Raritan River at Rt 35
2M	Raritan Bay Lower at Union Beach
3M	Delaware River at Deepwater
4M	Delaware River at National Park

## Lakes

53L	Double Trouble Lake
54L	Echo Lake
55L	Green Turtle Lake
56L	Greenwood Lake
57L	Grovers Mill Pond
58L	Hainsville Pond
59L	Malaga Lake
60L	Oak Ridge Reservoir
61L	Speedwell Lake
62L	Steenykill Lake
63L	Success Lake
64L	Sunset Lake
65L	Wawayanda Lake
66L	Whitesbog Pond
67L	Willow Grove Lake
68L	Strawbridge Lake at Moorestown
69L	Stewart Lake at Woodbury Creek
70L	Linden Lake

## Marine/Estuarine

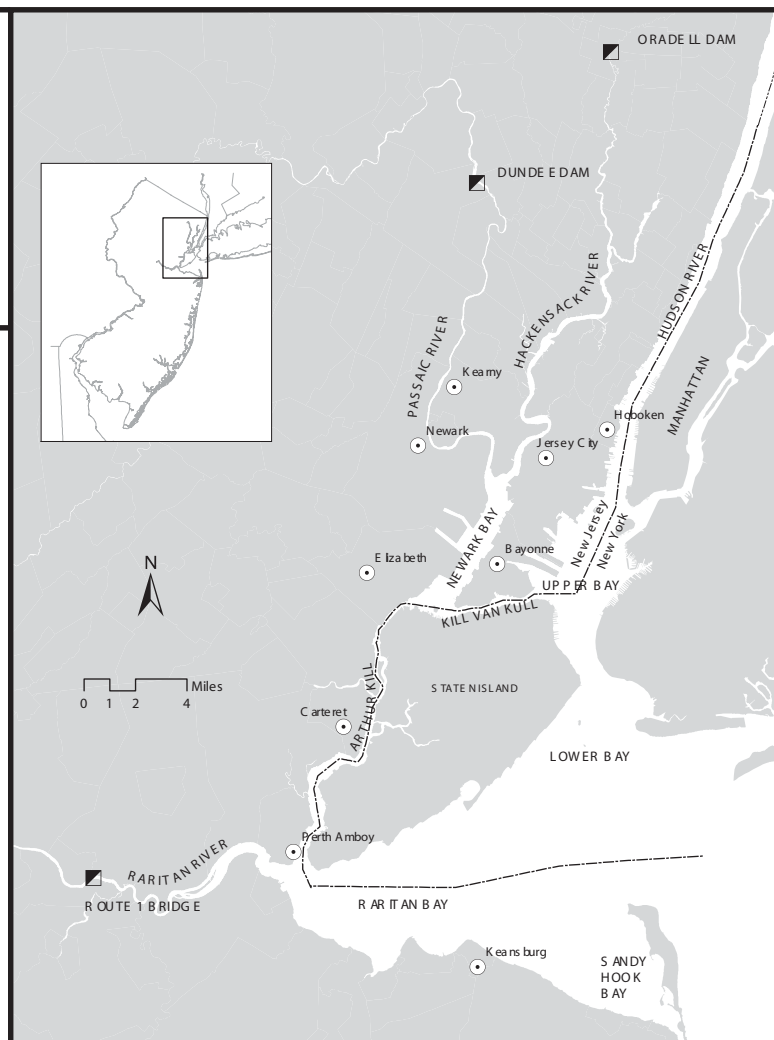
5M	Delaware River/Bay at Port Penn
6M	Delaware River/Bay at Bower's Beach, DE
7M	Delaware River/Bay W of Reeds Beach, SE of Thompsons
8M	Delaware River/Bay at Reedy Island
9M	Cohansey River at Greenwich
10M	Maurice River at Mauricetown
11M	Shark River at Belmar
12M	Navesink River at Fairhaven
13M	Shrewsbury River at Oceanport
14M	Atlantic Ocean just NW of Sandy Hook
15M	Atlantic Ocean at Island Beach State Park
16M	Atlantic Ocean about 12 miles off Belmar
17M	Atlantic Ocean at Barneget Light
18M	Atlantic Ocean E of Sea Isle City, S of Ocean City
19M	Atlantic Ocean about 1 mile S of Cape May

## Northeast

## New

## Jersey

## Waters



The NJDEP and NJDHSS can provide more information on the advisories and the health effects of chemical contaminants in the fish. To stay current with advisory updates and to request additional information, please contact the NJDEP Division of Science, Research and Technology at 1-609-984-6070 or check the website [www.state.nj.us/dep/dsr/njmainfish.htm](http://www.state.nj.us/dep/dsr/njmainfish.htm) or the NJDHSS at 1-609-588-3123 or [www.state.nj.us/health/eoh/foodweb](http://www.state.nj.us/health/eoh/foodweb)